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First Named Inventor	Edlin Solomon
Art Unit	2815
Examiner Name	Joseph Nguyen
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ENCLOSURES *(Check all that apply)*

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- [ ] Information Disclosure Statement
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Remarks

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Firm or Individual name	Edlin Solomon
Signature	Edlin
Date	02.10.2004

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Examiner -- Joseph Nguyen
Applicant -- Edlin Solomon
Reply mailed 02.10.2004.
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Reply No.7 to Notice received on 10.18.2002.

H01L 29/06
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BIDIRECTIONAL BIPOLAR STATIC INDUCTION DEVICE

"between paragraph 0005 and 0007". This result is achieved by an impurity concentration near the gate is high enough.

"paragraph 0008. The offered transistors (offered) can be applied for production, transfer and use of electric energy within a very broad range of power: from the control of electrical soldering to the control of most powerful turbogenerators and thermonuclear stations. They are effective for designing electronic transformators, power supply units, and "flexible transfers of alternating current". In the latter case transistors can be connected in series, which will allow to easily create high voltage system with operating voltage 10.sup.6 V and (over) more with a control with light signals or by wireless. These transistors can be most widely used in the devices aimed at defending people from electric shock. They can also be used in systems with the unipolar power supply transmitting energy in both directions -- both from a source to a load (resonator) and from (a) the load to (a) the source. It will make it possible to increase circuit efficiency with the voltage drop between a drain and source of the open transistor as a rule not exceeding 0.5 V and, if necessary, it can be highly close to zero.

"paragraph 0010". Though the structure of the transistor is symmetric the operating duty of the channel that is near the drain of the transistor essentially differs from the operating duty of the channel that is near its source. The electrical field reduces the concentration of holes in the former and increases their concentration in the latter. Owing to this, the hole concentration along an axis perpendicular to surface is trapezioidal in zero approximation. It puts certain restrictions both on the design parameters of BSIT and on designing of circuits in which these transistors are applied. Introduced in the structure the thick channel provides increasing of operating current (without latch). A threshold voltage of the thick channel is lower than that of the ordinary channel. Algorithm of control of the offered transistor (offered) under typical circumstances is more complicated than that of the transistor described above ([1]) [3]. Let potentials of the gates are equal to potentials of the source and drain accordingly. The electrons flowing to the drain electrode can cause emission of the holes from the gate, disposed near the drain. The holes flow to the gate, disposed near the source. Part of the holes flow into the channel and causes the flow of the electrons to the drain. So, there is a positive feedback in the device. Device is latched. On-voltage of the latched device is more than on-voltage of the open transistor. To (preserve) prevent the feedback it is necessary to provide so that electrons might flow to the drain free. It depends both on a control circuit and on the construction of the transistor. The part of the control circuit is represented on fig.10 of the application. Electrons can (might) flow to the drain through open transistor 113 or 123. (In the simplest variant the thick channel drain electrode has been